

Notice of Allowability**Application No.**

10/563,921

Applicant(s)

VAN DE HAAR ET AL.

Examiner

ATIBA O. FITZPATRICK

Art Unit

2624

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/17/2009.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☒ Interview Summary (PTO-413), Paper No./Mail Date 20090908.
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____.

/A. O. F./
Examiner, Art Unit 2624

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gregory L. Thorne on 9/3/2009.

The application has been amended as follows:

1. (Currently amended) An imaging system arranged to reduce an artifact in a three-dimensional reconstructed volume comprising a plurality of planar images, said imaging system comprising:

an image artifact reducer arranged to process said planar image with a first corrective image for eliminating a first source of structured noise in said image, thereby producing a gain corrected image, arranged to apply an unwarping function to the gain corrected image, thereby producing an unwarped gain corrected image, and arranged to apply a second corrective image to the unwarped gain corrected image for eliminating a second source of structured noise in said image and thereby reduce artifacts in the three-dimensional reconstructed volume.

7. (Currently amended) A method for reducing an artifact in a three-dimensional reconstructed volume comprising a plurality of planar images, said method comprising the steps of:

processing the image using a first corrective image to eliminate a first source of structured noise in the image yielding a first-stage corrected image;

processing the first-stage corrected image with an unwarping function yielding an unwarped first-stage corrected image; and

processing the unwarped first-stage corrected image with a second corrective image to eliminate a second source of structured noise in the image yielding a second-stage corrected image and thereby reduce artifacts in the three-dimensional reconstructed volume.

10. (Currently amended) A computer program stored on a computer readable memory medium, the computer program being arranged to reduce an artifact in a three-dimensional reconstructed volume comprising a plurality of planar images by processing the planar image with a first corrective image to eliminate a first source of structured noise in the image, thereby producing a gain corrected image, by applying an unwarping function to the gain corrected image, thereby producing an unwarped gain corrected image, and applying a second corrective image to the unwarped gain corrected image to eliminate a second source of structured noise in the image and thereby reduce artifacts in the three-dimensional reconstructed volume.

Claims 1-10 are allowed. The following is an examiner's statement of reasons for allowance: In the office action mailed 03/17/2009, the office rejected Applicant's independent claims as being obvious since changing the order of applying the gain images would not change the result of the multiplication since multiplication is commutative and associative. In Applicant's response dated 06/17/2009, Applicant amended the independent claims to indicate that the corrected image that was created by applying the first gain image is unwarped by applying an unwarping function prior to applying the second gain image to the unwarped gain correction image. There is no reasoning or evidence that changing the order of operations including applying the unwarping function would cause the same result. The prior art does not teach this sequence of steps for reducing artifacts in a three-dimensional reconstructed volume of a plurality of planar images.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATIBA O. FITZPATRICK whose telephone number is (571)270-5255. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir A. Ahmed can be reached on (571)272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. O. F./
Examiner, Art Unit 2624

/Samir A. Ahmed/
Supervisory Patent Examiner, Art Unit 2624